

IN THE CLAIMS:

Please cancel Claims 1-16 and add Claims 17-32 as indicated below. The following is a complete listing of the claims, and replaces all previous versions and listings of claims in the present application.

Claims 1-16 (Canceled)

Claim 17 (New): A potential sensor comprising:

first and second detection electrodes opposed to a potential-measured object a potential of which is to be measured; and

a movable shutter positioned between the detection electrodes and the potential-measured object with gaps thereto,

wherein said movable shutter is configured to assume a first state and a second state, the first detection electrode being entirely exposed and the second detection electrode being entirely masked when the movable shutter assumes the first state, and the first detection electrode being entirely masked and the second detection electrode being entirely exposed when the movable shutter assumes the second state.

Claim 18 (New): The potential sensor according to claim 17, wherein said movable shutter is elastically supported to be movable between the first state and the second state.

Claim 19 (New): The potential sensor according to claim 18, wherein a drive frequency of said potential sensor is substantially equal to a mechanical resonance frequency of said movable shutter.

Claim 20 (New): The potential sensor according to claim 17, wherein said movable shutter is configured to be controlled by magnetic-field generation means, which generates a magnetic field substantially perpendicular to a movable direction of said movable shutter, and current application means, which supplies said movable shutter with a current substantially perpendicular to the movable direction of said movable shutter and to a direction of the magnetic field, thereby causing said movable shutter to assume said first state and said second state.

Claim 21 (New): The potential sensor according to claim 20, wherein the magnetic field generation means is a permanent magnet or an electromagnetic coil.

Claim 22 (New): The potential sensor according to claim 17, further comprising one or more addition movable shutters and at least one additional current application means, which supplies said movable shutters with currents substantially perpendicular to the moving directions of said movable shutters, whereby the first state and the second state are assumed by an interaction of the currents supplied to said movable shutters.

Claim 23 (New): The potential sensor according to claim 17, wherein said first and second detection electrodes are disposed adjacent each other at an interval so as not to short electrically.

Claim 24 (New): The potential sensor according to claim 17, wherein said shutter is comprised of an actuator.

Claim 25 (New): A potential sensor comprising:
plural detection electrodes disposed adjacent each other; and
plural movable shutters each of which is individually actuated to mask or expose the plural detection electrodes selectively, at least one of the plural movable shutters being activated so as to expose a first detection electrode of the plural detection electrodes and mask a second detection electrode of the plural detection electrodes, which is adjacent to the first detection electrode, at a first state, and so as to expose the second detection electrode and mask the first detection electrode at a second state.

Claim 26 (New): The potential sensor according to claim 25, wherein said plural movable shutters include three or more movable shutters arranged in a juxtaposition such that a movable shutter not located on an edge of the juxtaposition masks at least one of the plural detection electrodes in the first state or the second state.

Claim 27 (New): A potential sensor comprising:

plural sensor units each of which is comprised of first and second detection electrodes opposed to a potential-measured object a potential of which is to be measured and adjacent each other; and

a movable shutter positioned between the detection electrodes and the potential-measured object with gaps thereto, the movable shutter being selectively positioned in a first state or a second state,

wherein the movable shutter masks the second detection electrode and exposes the first detection electrode wider to the potential-measured object in the first state than in the second state, and masks the first detection electrode and exposes the second detection electrode wider to the potential-measured object in the second state than in the first state.

Claim 28 (New): The potential sensor according to claim 27, wherein in the plurality of sensor units at least two detection electrodes exposed and at least two detection electrodes masked to the potential-measured object respectively in the first state of the movable shutters are electrically connected to each other, respectively.

Claim 29 (New): The potential sensor according to claim 27, wherein the plurality of sensor units are arranged in an array.

Claim 30 (New): A potential sensor comprising:
a substrate;

first and second detection electrode assemblies provided on the substrate, at least one of the assemblies being formed in plural parts; and

a movable shutter provided between the detection electrode assemblies with a gap thereto,

wherein the first detection electrode assembly is exposed to a potential-measured object wider when said movable shutter assumes a first state than when said movable shutter assumes a second state, and the second detection electrode assembly is exposed to the potential-measured object narrower when said movable shutter assumes the first state than when said movable shutter assumes the second state.

Claim 31 (New): An image forming apparatus comprising:

a potential sensor according to claim 17; and

image forming means configured to control an image formation based on an output of said potential sensor.

Claim 32 (New): A potential measuring method comprising:

a step of positioning a potential sensor that includes first and second electrodes and a movable shutter for selectively masking the first and second electrodes, in which the movable shutter is configured to assume a first state and a second state, the first electrode is exposed wider when the movable shutter assumes the first state than when the movable shutter assumes the second state, and the second electrode is exposed narrower when the movable shutter assumes the first state than when the movable shutter assumes

the second state, and a potential-measured object in such a manner that the movable shutter is positioned between the potential sensor and the potential-measured object; and

a step of switching the movable shutter between the first state and the second state, and measuring a potential of the potential-measured object based on a change in an electrostatic capacitance generated between the first and second electrodes and the potential-measured object.